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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/854,333	05/11/2001	Brian S. Medower		7661

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EXAMINER
ANGEBRANNDT, MARTIN J

ART UNIT	PAPER NUMBER
1756	13

DATE MAILED: 06/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/854,333	MEDOWER ET AL.	
	Examiner	Art Unit	
	Martin J Angebranndt	1756	

-- The MAILING DATE of this communication appears on the c ver sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 August 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim 1,3-13 and 15-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,960,680 A (PAN et al.) in view of EP 0945860 A (MATSUSHITA ELECTRIC INDUSTRIAL CO LTD) and JP 03-086943 A (ASAHI CHEM IND CO LTD).

US 4,960,680 A (PAN et al.) teaches SnSbIn phase change optical recording media. The upper side of the recording layer (42) in figure 2 is shown to have a protective overcoat (41).The recording layer material may be coated by sputtering or evaporation (column 5/lines 43-54) Example 1 uses a 80 nm thick SnSbIn recording layer. (column 6). Example 3 uses 100 nm thick recording layer coatings (column 7). There is a sample in the table in column 9, which corresponds to $Sb_{70}Sn_{15}In_{15}$.

EP 0945860 A (MATSUSHITA ELECTRIC INDUSTRIAL CO LTD) teaches that silicon oxynitride (SiON) and silcion dioxide are known protective layer materials [0020]. The these are disclosed as useful as crystallization acceleration layers as well [0030]. The thickness of the upper crystallization acceleration layers may be 10 to 80 nm. [0050].

JP 03-086943 A (ASAHI CHEM IND CO LTD) teaches the provision of silicon oxynitride protective layers over optical recording media (abstract). This is described as having good water/moisture barrier properties, good mechanical strength, good chemical stability and resistance to peeling or cracking (abstract). The use of phase change optical recording media, including Se and Te is described in the upper left column of page 2. Useful thicknesses appear

in the examples and include 80 nm (page 6,lower left column), 35 nm (example 2, page 6/upper right column)

It would have been obvious to one skilled in the art to modify the invention of US 4,960,680 A (PAN et al.) by providing a protective layer coating as disclosed in figure 2 of that reference and to use known protective layer materials such as the SiON taught by of EP 0945860 A (MATSUSHITA ELECTRIC INDUSTRIAL CO LTD) and JP 03-086943 A (ASAHI CHEM IND CO LTD) with a reasonable expectation of gaining the protective effects described by JP 03-086943 A (ASAHI CHEM IND CO LTD) and the additional advantages of an acceleration in the speed of transformation from the amorphous to the crystalline state as disclosed by EP 0945860 A (MATSUSHITA ELECTRIC INDUSTRIAL CO LTD).

3. Claim 1,3-6,8-13,15-17 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over **either of** US 4,774,170 A (PAN et al.), US 4,812,386 A (PAN et al.) or US 4,798,785 A (PAN et al.), in view of EP 0945860 A (MATSUSHITA ELECTRIC INDUSTRIAL CO LTD) and JP 03-086943 A (ASAHI CHEM IND CO LTD).

US 4,774,170 A (PAN et al.) teaches SnSbZn phase change optical recording media. The upper side of the recording layer (42) in figure 2 is shown to have a protective overcoat (41).The recording layer material may be coated by sputtering or evaporation (column 4/lines 39-50). Example 1 uses a 80 nm thick SnSbZn recording layer. (column 4). Example 3 uses 100 nm thick recording layer coatings (column 5).

US 4,812,386 A (PAN et al.) teaches SnSbGe phase change optical recording media. The upper side of the recording layer (42) in figure 2 is shown to have a protective overcoat (41).The recording layer material may be coated by sputtering or evaporation (column 5/lines 15-26).

Example 1 uses a 80 nm thick SnSbGe recording layer. (column 5). Example 3 uses 100 nm thick recording layer coatings (column 6).

US 4,798,785 A (PAN et al.) teaches SnSbAl phase change optical recording media. The upper side of the recording layer (42) in figure 2 is shown to have a protective overcoat (41).The recording layer material may be coated by sputtering or evaporation (column 4/lines 55-66). Example 1 uses a 80 nm thick SnSbZn recording layer. (column 5). Example 3 uses 100 nm thick recording layer coatings (column 6).

It would have been obvious to one skilled in the art to modify the invention of **either of** US 4,774,170 A (PAN et al.), US 4,812,386 A (PAN et al.) or US 4,798,785 A (PAN et al.) by providing a protective layer coating as disclosed in figure 2 of that reference and to use known protective layer materials such as the SiON taught by of EP 0945860 A (MATSUSHITA ELECTRIC INDUSTRIAL CO LTD) and JP 03-086943 A (ASAHI CHEM IND CO LTD) with a reasonable expectation of gaining the protective effects described by JP 03-086943 A (ASAHI CHEM IND CO LTD) and the additional advantages of an acceleration in the speed of transformation from the amorphous to the crystalline state as disclosed by EP 0945860 A (MATSUSHITA ELECTRIC INDUSTRIAL CO LTD).

4. Claims 1-6,8-17 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over **either of** US 4,774,170 A (PAN et al.), US 4,812,386 A (PAN et al.) or US 4,798,785 A (PAN et al.), in view of EP 0945860 A (MATSUSHITA ELECTRIC INDUSTRIAL CO LTD) and JP 03-086943 A (ASAHI CHEM IND CO LTD), and further in view of US 5,972,459 A (KAWAKUBO et al.).

US 5,972,459 A (KAWAKUBO et al.) teaches a variety of different structures for optical

recording media in figures 16-23. Figure 23 shows an embodiment where a central substrate is used and two recording layers are provided, one on each side, effectively doubling the recording capacity. (column 13/line 59-column 14/line 19). The use of phase change recording layers is specifically taught in column 12 at lines 13-20.

In addition to the basis provided above, it would have been obvious to one skilled in the art to modify the invention of over either of US 4,774,170 A (PAN et al.), US 4,812,386 A (PAN et al.) or US 4,798,785 A (PAN et al.), in view of EP 0945860 A (MATSUSHITA ELECTRIC INDUSTRIAL CO LTD) and JP 03-086943 A (ASAHI CHEM IND CO LTD) by providing each side of the substrate t with a recording layer to double the capacity of the medium based upon the teachings of US 5,972,459 A (KAWAKUBO et al.).

5. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,960,680 A (PAN et al.) in view of EP 0945860 A (MATSUSHITA ELECTRIC INDUSTRIAL CO LTD) and JP 03-086943 A (ASAHI CHEM IND CO LTD), and further in view of US 5,972,459 A (KAWAKUBO et al.).

In addition to the basis provided above, it would have been obvious to one skilled in the art to modify the invention of over US 4,960,680 A (PAN et al.), in view of EP 0945860 A (MATSUSHITA ELECTRIC INDUSTRIAL CO LTD) and JP 03-086943 A (ASAHI CHEM IND CO LTD) by providing each side of the substrate t with a recording layer to double the capacity of the medium based upon the teachings of US 5,972,459 A (KAWAKUBO et al.).

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ono et al. JP 09-198712 teach phase change optical recording media with protective layers, which comprise ZnS and SiON.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebranndt whose telephone number is 703-308-4397. The examiner can normally be reached on Availible Mondays-Thursday and alternative Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Martin J Angebranndt
Primary Examiner
Art Unit 1756

June 26, 2003